

Claims 1-3 (Canceled).

Claim 4 (Amended) A method of measuring an activity of a COX-2 enzyme in a living subject sample, comprising:

- a. obtaining a sample from a living subject;
- b. quantifying an amount of a PGH<sub>2</sub>-EA metabolite in the sample; and
- ~~b.~~ c. relating the amount of the PGH<sub>2</sub>-EA metabolite to the activity of the COX-2 enzyme in the subject.

Claim 5 (Canceled).

Claim 6. (Amended). A method of detecting an activity of a COX-2 enzyme in a living subject, comprising:

- a. obtaining a sample of the living subject; ~~and~~
- b. detecting an amount of a PGH<sub>2</sub>-EA metabolite in the sample, wherein the presence of the PGH<sub>2</sub>-EA metabolite in the sample indicates the activity of the COX-2 enzyme in the subject; and
- c. relating the detected amount to a disease state or the progression of a disease state.

Claim 7 (Original). The method of Claim 6, wherein the PGH<sub>2</sub>-EA metabolite is selected from the group consisting of PGB<sub>2</sub>-EA, PGD<sub>2</sub>-EA, PGE<sub>2</sub>-EA, PGF<sub>2a</sub>-EA, TxB<sub>2</sub>-EA, 6-keto-PGF<sub>1a</sub>-

EA, 15-keto-PGE<sub>2</sub>-EA, 13,14-dihydro-15-keto-PGE<sub>2</sub>-EA, PGG<sub>2</sub>-EA, PGH<sub>2</sub>-EA, PGA<sub>2</sub>-EA, PGJ<sub>2</sub>-EA, PGJ<sub>2</sub>-EA derivatives, bicyclo-PGE<sub>2</sub>-EA, 6-keto-PGF<sub>1α</sub>-EA, TxA<sub>2</sub>-EA and PGI<sub>2</sub>-EA.

Claim 8 (Amended). The method of Claim 6, wherein the living subject is a mammal.

Claim 9 (Original). The method of Claim 6, wherein the sample is urine.

Claim 10 (Original). The method of Claim 6, wherein the sample is selected from a group consisting of: blood, plasma, cerebrospinal fluid, saliva, sputum, bile, joint fluid, biopsy, and conditioned media from a cell culture.

Claim 11 (Original). The method of Claim 6, wherein the detecting step further comprises generating a mass chromatogram of the PGH<sub>2</sub>-EA metabolites.

Claim 12 (Original). The method of Claim 6, wherein the detecting step includes an immunoassay step.

Claim 13 (Amended). A method of measuring an activity of a COX-2 enzyme in a living subject, comprising:

- a. obtaining a sample of the living subject;
- b. measuring an amount of a PGH<sub>2</sub>-EA metabolite in the sample; ~~and~~
- c. relating the amount measured to the activity of the COX-2 enzyme; and

d. relating the activity of the COX-2 enzyme to a disease state in the living subject or the progression of a disease state in the living subject.

Claim 14 (Amended). The method of Claim 13, wherein the relating the amount step further comprises comparing the amount measured to a standard value.

Claim 15 (Original). The method of Claim 13, wherein the relating step further comprises generating a standard curve.

Claim 16 (Original). The method of Claim 13, wherein the PGH<sub>2</sub>-EA metabolite is selected from the group consisting of PGB<sub>2</sub>-EA, PGD<sub>2</sub>-EA, PGE<sub>2</sub>-EA, PGF<sub>2</sub> a-EA, TxB<sub>2</sub>-EA, 6-keto-PGF<sub>1</sub>a-EA, 15-keto-PGE<sub>2</sub>-EA, 13,14-dihydro-15-keto-PGE<sub>2</sub>-EA, PGG<sub>2</sub>-EA, PGH<sub>2</sub>-EA, PGA<sub>2</sub>-EA, PGJ<sub>2</sub>-EA, PGJ<sub>2</sub>-EA derivatives, bicyclo-PGE<sub>2</sub>-EA, 6-keto-PGF<sub>1</sub>a-EA, TxA<sub>2</sub>-EA and PGI<sub>2</sub>-EA.

Claim 17 (Original). The method of claim 13, wherein the subject is a mammal.

Claim 18 (Original). The method of claim 13, wherein the sample is urine.

Claim 19 (Original). The method of claim 13, wherein the sample is selected from a group consisting of: blood, plasma, cerebrospinal fluid, saliva, sputum, bile, joint fluid, biopsy, and conditioned media from a cell culture.

Claim 20 (Original). The method of Claim 13, wherein the detecting step further comprises generating a mass chromatogram of the PGH<sub>2</sub>-EA metabolites.

Claim 21 (Original). The method of Claim 13, wherein the detecting step includes an immunoassay step.

Claim 22 (Withdrawn). A method of screening for a tumor in a subject in need thereof, comprising:

- a. obtaining a sample of the subject; and
- b. detecting a PGH<sub>2</sub>-EA metabolite in the sample; wherein the presence of the PGH<sub>2</sub>-EA metabolite is indicative of the tumor in the subject.

Claim 23 (Withdrawn). A method of screening for a tumor in a subject in need thereof, comprising:

- a. obtaining a sample of the subject;
- b. measuring an amount of a PGH<sub>2</sub>-EA metabolite in the sample; and
- c. relating the amount measured to an existence of the tumor.

Claim 24 (Withdrawn). A method of monitoring an anticancer treatment, comprising:

- a. obtaining a first sample of a patient;
- b. measuring a first amount of PGH<sub>2</sub>-EA metabolite in the first sample;

- c. obtaining a second sample from the patient after the patient undergoes anticancer therapy;
- d. measuring a second amount of the  $\text{PGH}_2\text{-EA}$  metabolite in the second sample; and
- e. determining a change in the second amount relative to the first amount, wherein the change determined is indicative of the effectiveness of the anticancer treatment.

Claim 25 (Withdrawn). A method of detecting an inflammation in a subject in need thereof, comprising:

- a. obtaining a sample of the subject; and
- b. detecting an amount of a  $\text{PGH}_2\text{-EA}$  metabolite in the sample, wherein an inflammation is indicated when the amount detected equals or exceeds a threshold value.

Claim 26 (Withdrawn). A method of measuring an inflammation in a subject in need thereof, comprising:

- a. obtaining a sample of the subject; and
- b. detecting an amount of a  $\text{PGH}_2\text{-EA}$  metabolite in the sample, wherein an inflammation is indicated when the amount measured equals or exceeds a threshold value.

Claim 27 (Withdrawn). A method of monitoring an anti-inflammation therapy in a subject in need thereof, comprising:

- a. obtaining a first sample from the subject;
- b. measuring a first amount of a  $\text{PGH}_2\text{-EA}$  metabolite in the first sample;

- c. obtaining a second sample from the patient after the anti-inflammation therapy;
- d. measuring a second amount of the COX-2 specific metabolite in the second sample; and
- e. determining a change in the second amount relative to the first amount, wherein the change determined is indicative of the effectiveness of the anti-inflammation therapy.

Claim 28 (Withdrawn). A composition comprising: a label for detecting a PGH<sub>2</sub>-EA metabolite.

Claim 29 (Withdrawn). The composition of Claim 28, further comprising an isolated PGH<sub>2</sub>-EA metabolite including an isotopic label.

Claim 30 (Withdrawn). The method of Claim 28, wherein the PGH<sub>2</sub>-EA metabolite is selected from the group consisting of PGB<sub>2</sub>-EA, PGD<sub>2</sub>-EA, PGE<sub>2</sub>-EA, PGF<sub>2</sub>α-EA, TxB<sub>2</sub>-EA, 6-keto-PGF<sub>1</sub>α-EA, 15-keto-PGE<sub>2</sub>-EA, 13,14-dihydro-15-keto-PGE<sub>2</sub>-EA, PGG<sub>2</sub>-EA, PGH<sub>2</sub>-EA, PGA<sub>2</sub>-EA, PGJ<sub>2</sub>-EA, PGJ<sub>2</sub>-EA derivatives, bicyclo-PGE<sub>2</sub>-EA, 6-keto-PGF<sub>1</sub>α-EA, TxA<sub>2</sub>-EA and PGI<sub>2</sub>-EA.

Claim 31 (Withdrawn). The composition of Claim 28, further comprising an isolated PGH<sub>2</sub>-EA metabolite including a non-positron emitting isotopic label.

Claim 32 (Withdrawn). The composition of Claim 28, further comprising an isolated PGH<sub>2</sub>-EA metabolite including an isotopic label selected from the group consisting of 2H, 3H, 13C, and 14C.

Claim 33 (Withdrawn). The composition of Claim 28, further comprising an PGH<sub>2</sub>-EA metabolite including a fluorescent label.

Claim 34 (Withdrawn). A process for making an isolated PGH<sub>2</sub>-EA metabolite including a label comprising: reacting a COX-2 metabolite with a labeled ethanolamide.

Claim 35 (Withdrawn). The process of Claim 34, wherein the label is isotopic.

Claim 36 (Withdrawn). The process of Claim 34, wherein the label is nonpositron emitting.

Claim 37 (Withdrawn). The process of Claim 34, wherein the label is selected from the group consisting of 2H, 3H, 13C, and 14C.

Claim 38 (Withdrawn). The process of Claim 34, wherein the label is fluorescent.

Claim 39 (Withdrawn). A process for making an isolated PGH<sub>2</sub>-EA metabolite including a label comprising: reacting a labeled COX-2 metabolite with ethanolamide.

Claim 40 (Withdrawn). The process of Claim 39, wherein the label is isotopic.

Claim 41 (Withdrawn). The process of Claim 39, wherein the label is nonpositron emitting.

Claim 42 (Withdrawn). The process of Claim 39, wherein the label is selected from the group consisting of  $2\text{H}$ ,  $3\text{H}$ ,  $^{13}\text{C}$ , and  $^{14}\text{C}$ .

Claim 43 (Withdrawn). The process of Claim 39, wherein the label is fluorescent.

Claim 44-48 (Canceled).

Claim 49 (Withdrawn). A process of making an antibody that binds specifically to  $\text{PGH}_2\text{-EA}$  metabolites from a prostaglandin with substituted cyclopentyl and amide moieties, comprising:

- a. protecting the cyclopentyl substituents and ethanolamide moiety of the prostaglandin to produce a protected PG-EA;
- b. chemically modifying the protected PG-EA with an appropriate conjugate to produce a protected, conjugated PG-EA;
- c. deprotecting the conjugated PG-EA to generate an immunogen; and
- d. purifying the immunogen.

Claim 50 (Withdrawn). A method of measuring an activity of a COX-2 enzyme in a subject, comprising:



- a. administering an amount of a AEA to the subject;
- b. obtaining a sample of the subject;
- c. measuring an amount of a PGH<sub>2</sub>-EA metabolites in the sample; and
- d. relating the amount of the PGH<sub>2</sub>-EA metabolites to the activity of the COX-2 enzyme.

Claim 51 (Withdrawn). The method of Claim 50, wherein the AEA includes a label.

Claim 52 (Withdrawn). The method of Claim 50, further comprising the step of comparing the amount measured to a standard.

Claim 53 (Withdrawn). A composition comprising: a prostaglandin D2-ethanolamide and pharmaceutically acceptable salts thereof.

Claim 54 (Withdrawn). A composition comprising: a 6-keto-prostaglandin F1 $\alpha$ -ethanolamide and pharmaceutically acceptable salts thereof.

Claim 55 (New). The method of claim 6, wherein the disease state is associated with inflammation.

Claim 56 (New). The method of claim 55, wherein the disease state is acute appendicitis, asthma, myocardial infarction, immunological disease processes, infection with viruses or

bacteria, malignancy and metastasis, endotoxemia and reperfusion injury, cell-proliferative diseases, psoriasis, pemphigus vulgaris, Behcet's syndrome, acute respiratory distress syndrome, ischemic heart disease, post-dialysis syndrome, leukemia, acquired immune deficiency syndrome, septic shock, acute inflammation, lipid histiocytosis.

Claim 57 (New). The method of claim 6, wherein the disease state is cancer.

Claim 58 (New). The method of claim 6, wherein the disease state is the presence of a tumor.

Claim 59 (New). The method claim 13, wherein the disease state is associated with inflammation.

Claim 60 (New). The method of claim 59, wherein the disease state is acute appendicitis, asthma, myocardial infarction, immunological disease processes, infection with viruses or bacteria, malignancy and metastasis, endotoxemia and reperfusion injury, cell-proliferative diseases, psoriasis, pemphigus vulgaris, Behcet's syndrome, acute respiratory distress syndrome, ischemic heart disease, post-dialysis syndrome, leukemia, acquired immune deficiency syndrome, septic shock, acute inflammation, lipid histiocytosis.

Claim 61 (New). The method 13, wherein the disease state is cancer.

Claim 62 (New). The method of claim 13, wherein the disease state is the presence of a tumor.